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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/568,370	02/14/2006	Gert Wim 'T Hooft	NL 031024	7600

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EXAMINER

CHU, KIM KWOK

ART UNIT	PAPER NUMBER
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2627

MAIL DATE	DELIVERY MODE
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10/01/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/568,370

Applicant(s)

T HOOFT ET AL.

Examiner

Kim-Kwok CHU

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period **will** apply and **will** expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply **will**, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Remarks filed on 7/2/2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 8-12 is/are rejected.
- 7) ☒ Claim(s) 2-7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2/14/2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

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Response to Remarks

1. Applicant's Remarks filed on July 2, 2008 have been fully considered. With respect to the rejected Claim 1, Applicant states that the prior art of Dil et al. (U.S. Patent 4,325,135) does not teach the grating strips comprising a birefringent material (page 7 of the Remarks, lines 6-8). Accordingly, the prior art of Dil teaches an information carrier (Figs. 9 and 10) having grating strips such as an information area 4, 4' (Fig. 11; column 10, lines 29-32). The information structure 4, 4' is regarded as a diffraction grating (column 10, lines 32 and 33). Although the prior art of Dil does not disclose the material of making the information structure 4, and 4', the choice of the information structure (recording layer) must be a birefringent material because the information structure 4 and 4' generates zero order and higher order light beams as disclosed in Dil's specification, column 10, lines 33-36. In other words, a birefringent material generates zero and higher order of light beams, the prior art of Dil's recording layer 4, 4' must be made of a birefringent material.

Applicant also argues that the prior art of Dil's birefringent material is a plate 33 (Fig. 11) instead of the information structure 4 and 4' (page 7 of the Remarks, lines 10-18). Accordingly, the plate 33 is in fact made of birefringent

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material, however, the recording layer having information structure 4 and 4' is also made of birefringent material so that zero and higher order of light beams can be generated (Fig. 12).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless --
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.*

3. Claims 1 and 8-12 are rejected under 35 U.S.C. § 102(b) as being anticipated by Dil et al. (U.S. Patent 4,325,135).

Dil teaches an optical recording carrier having all of the elements and means as recited in Claims 1 and 8-12. For example, Dil teaches the following:

(a) with respect to Claim 1, the optical record carrier 1 having at least one information layer (Fig. 9; there are two layers 31 and 31'), wherein information is encoded in an information structure comprising information areas 4 (Fig. 10), which alternate with intermediate areas 4', characterized in that the information layer is provided with a polarization-sensitive diffraction grating 4, 4' comprising a grating layer (Fig. 10; the middle layer between two recording layers 31 and

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31'), which is divided in grating strips of a first type 4 alternating with intermediate strips 3' of a second type (Fig. 10), at least one of the types comprising a birefringent material (Fig. 12; column 10, lines 30-47; recording layer such as organic film, silicon film etc. has a birefringent property), and in that the refractive indices of the grating strips 4 and intermediate strips 3' are different for radiation polarized in a direction parallel to the grating plane and perpendicular to the grating strips (Figs. 9 and 10; strip 4 and

(b) with respect to Claim 8, the birefringent grating 3' is a transmission grating (Fig. 10; light transmits through 3' and reach next layer 4).

(c) with respect to Claim 9, the birefringent grating 4 is a reflective grating (Fig. 10; grating 4 is made of silver).

(d) with respect to Claim 10, that first information tracks comprising information areas showing higher spatial frequencies alternate with second information tracks comprising information areas showing lower spatial frequencies (Fig. 9; storage capacity is different in tracks 3 and 4).

(e) with respect to Claim 11, a device comprises a radiation source unit 10 for supplying read beam radiation, an objective system for focusing the read beam radiation in the information layer and a detection branch 19 (Fig. 11) comprising

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a radiation-sensitive detection system for converting read beam radiation the record carrier into an electrical signal, characterized in that the radiation source unit supplies read beam radiation having two mutually perpendicular polarization components (Fig. 11; after the wave-plate 33; column 18, lines 45-61), in that the detection branch comprises a polarization-sensitive beam splitter and in that the radiation-sensitive detection system comprises a separate detector for each of the two polarization components from the beam splitter (Fig. 11).

(f) with respect to Claim 12, the radiation components 10 and 33 constitute two spatially separated read beams and in that the objective system focuses these beams in two spots in the information layer of the record carrier 1 to be read, whereby the distance between the spots in the direction perpendicular to the information track direction is substantially equal to the distance between the information tracks (Figs. 9-11).

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Allowable Subject Matter

4. Claims 2-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is an Examiner's statement of reasons for the indication of allowable subject matter:

As in claims 2, the prior art of record fails to teach or fairly suggest an optical record carrier following feature:

(a) the birefringent material is a liquid crystal.

As in claims 4, the prior art of record fails to teach or fairly suggest an optical record carrier following feature:

(a) the birefringent material is a polymeric material comprising polymerized aligned liquid crystalline monomers.

As in claims 5, the prior art of record fails to teach or fairly suggest an optical record carrier following feature:

(a) the grating strips comprise an anisotropic material having at least two refractive indices and the intermediate strips comprise isotropic material and in that one the refractive indices of the anisotropic material is substantially equal to the refractive index of the isotropic material.

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As in claims 6, the prior art of record fails to teach or fairly suggest an optical record carrier following feature:

(a) the grating strips differ from the intermediate strips in that the degree of alignment of the liquid crystal molecules in the grating strips is substantially different from that degree in the intermediate strips.

As in claims 7, the prior art of record fails to teach or fairly suggest an optical record carrier following feature:

(a) the grating strips differ from the intermediate strips in that the direction of alignment of the liquid crystal molecules in the grating strips is different from that direction in the intermediate strips.

The features indicated above, in combination with the other elements of the claims, are not anticipated by, nor made obvious over, the prior art of record.

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Related Prior Art

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Funato et al. (7,164,532) is pertinent because Funato teaches a recording layer made of diffraction grating.

Yamamoto et al. (6,650,615) is pertinent because Yamamoto teaches a recording layer made of birefringent material.

7. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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8. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Kim CHU whose telephone number is (571) 272-7585 between 9:30 am to 6:00 pm, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen, can be reached on (571) 272-7579.

The fax number for the organization where this application or proceeding is assigned is (571) 273-8300

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished application is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9191 (toll free).

/Kim-Kwok CHU/

Examiner AU2627

September 26, 2008
(571) 272-7585

/HOA T NGUYEN/
Supervisory Patent Examiner, Art Unit 2627